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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,292	04/22/2004	Kunio Goto	12014-0017DV	7228
22902	7590	04/13/2007		
CLARK & BRODY 1090 VERMONT AVENUE, NW SUITE 250 WASHINGTON, DC 20005			EXAMINER STOUFFER, KELLY M	
			ART UNIT	PAPER NUMBER
			1762	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/13/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/829,292	GOTO, KUNIO	
	Examiner	Art Unit	
	Kelly Stouffer	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7,18,19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,7,18,19 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 December 2006 has been entered.

Response to Arguments

2. Applicant's arguments filed 12 December 2006 have been fully considered but they are not persuasive. The applicant argues that since the range of heating for the two stage heating does not overlap with that of Tsuru the present invention is no longer obvious over Tsuru. However, Tsuru teaches, "The heating temperature may be arbitrarily determined in accordance with the properties of organic resin binder contained in the solid lubricant." Tsuru et al. also teaches "the method or condition of heating and baking is not limited to the specific example." Therefore it remains the Examiner's position that since multi-stage heating is a well known means for heating and curing coatings in the coating art that it would have been obvious for an engineer having ordinary skill in the art to have used multi-stage heating with the expectation of similar, successful results. The prior art references of Emch (US 6,579,575 and US 6,291,027) are cited to demonstrate the conventionality of using multi-stage heating.

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processes for baking and curing organic coatings and to support this position of the examiner, and are not used to reject the claims.

Applicant also argues that the specification has comparative evidence showing that unexpected results are attained when practicing the invention as compared to a single-stage heating process. These showings are convincing that unexpected results are attained in using two heating steps in place of a single step, particularly Comparative Examples 1 and 2 and on page 26. However, the Examiner notes that the claims are not commensurate in scope with the showing. MPEP 716.02(d). Applicant claims use of *any* resin and a broad group of lubricating powder in claim 1, however unexpected results were only demonstrated with use of MoS₂ lubricating powder and polyamideimide or epoxy resin. The claims should be narrowed to reflect the showing of results, or Applicant should provide scientific arguments on the record as to why *all* resins and this group of lubricating powders would achieve similar unexpected results. In the absence of such a showing of unexpected results *commensurate in scope with the claims*, the 35 USC 103(a) rejections are maintained for the reasons discussed above and in the prior Office actions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-4, 6-7, 18-19 and 21-23 are rejected under 35 U.S.C. 103(a) as obvious over Tsuru et al. (US 6,027,145).

Tsuru et al. discloses a process for the surface treatment of a threaded joint for steel pipes comprising a pin and a box, each having a contact surface including a threaded portion and an unthreaded metal contact portion, comprising the steps of: roughening the surface of at least one of the pin and the box (Table 1 and column 23) applying a coating fluid containing a resin and a lubricating powder (a molybdenum disulfide or tungsten disulfide in col. 18, lines 60-63) in a solvent to the contact surface of at least one of the pin and the box, and drying and baking the applied coating at a temperature in the range of 180-270 C (col. 21, lines 1-19).

Tsuru et al. lacks a specific teaching of drying the applied coating by multistage heating. It is the Examiner's position that a threaded joint that is initially at room temperature, or any lower temperature, and is heated at a temperature in the range of 180-270 C will first be heated at a lower temperature in the range of 70-150 C in the process of ramping up the temperature of the joint from room temperature (or a

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temperature lower than the oven temperature) to the oven temperature, even if only for a fraction of a second.

Alternatively, the Examiner notes that it is well known in the coating art to heat coated substrates in stages in order to obtain more uniform heating of the coated substrate and more even solvent removal from the coating with an expected loss of efficiency in processing time. It is the Examiner's position that it would have been obvious for one having ordinary skill in the art to have performed the heating and baking step in Tsuru et al.'s process by heating in two stages in order to improve heating and solvent removal efficiency. Tsuru teaches, "The heating temperature may be arbitrarily determined in accordance with the properties of organic resin binder contained in the solid lubricant." Tsuru et al. also teaches "the method or condition of heating and baking is not limited to the specific example." Since multi-stage heating is a well known means for heating and curing coatings in the coating art that it would have been obvious for an engineer having ordinary skill in the art to have used multi-stage heating with the expectation of similar, successful results.

As to claim 2, Tsuru et al. teaches a preheating step in col. 21, lines 20-26 and Examples 5, 7, 15, and 16, etc.

As to claims 6-7 and 21-22, Tsuru et al. teaches that a manganese phosphate chemical formation coating layer is formed on the threaded joint, forming a contact surface to which the coating fluid is applied. Tsuru et al. teaches that the manganese phosphate chemical formation layer is porous (col. 15, lines 61-67), and the surface

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roughness of the phosphate chemical formation layer is in the range of 3-30 μm R_M (col. 13, lines 37-38).

As to claims 3-4 and 18-19, Tsuru et al. is silent with regard to the hardness and adhesive strength of the solid lubricant coating formed. However it is noted that Tsuru et al. teaches that a lubricant coating has excellent hardness and toughness and the adhesive property of it to the manganese phosphate chemical formation layer is very high (col. 21, lines 46-67). It is the Examiner's position that the hardness and adhesive strength of the layer would be within the claimed range since the coating materials and process steps of Tsuru et al. are materially similar to that claimed by Applicant. Any differences in properties between the claimed invention and that of Tsuru et al. must have been caused by process variables not claimed in the instant application.

As to claim 23, Tsuru et al. teaches some of the claimed resins in the abstract.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly Stouffer whose telephone number is (571) 272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Stouffer
Examiner
Art Unit 1762

kms



TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER